

What is claimed is:

1. A method of optimizing lifetime of a display, the method comprising:
determining whether to control at least a portion of a display based on a lifetime
metric;
5 identifying a plurality of display control options in response to determining to
control the at least a portion of the display; and
selecting at least one of the display control options to control the display.
2. The method of claim 1, further comprising:
10 implementing the selected display control option to increase a remaining life of the
at least a portion of the display.
3. The method of claim 1, wherein identifying a plurality of display control options
comprises:
15 identifying a plurality of display control options using a usage model.
4. The method of claim 1, wherein selecting at least one of the display control
options comprises:
selecting at least one of the display control options using at least one of the usage
20 model and a lifetime model.
5. The method of claim 1, wherein determining whether to control the display based
on a lifetime metric comprises:

comparing the lifetime metric to a threshold; and
determining to perform the step of identifying a plurality of display control options
in response to the lifetime metric exceeding the threshold.

- 5 6. The method of claim 1, wherein selecting at least one of the plurality of display
control options comprises:
evaluating the plurality of display control options; and
selecting the at least one of the plurality of display options based on the evaluation.

- 10 7. The method of claim 6, wherein evaluating the plurality of display control options
comprises:
identifying a constraint on implementing any one of the plurality of display control
options.

- 15 8. The method of claim 7, wherein the constraint comprises a user acceptance setting.

9. The method of claim 6, wherein evaluating the plurality of display control options
comprises:
determining a lifetime savings for each of the plurality of the display control
20 options.

10. The method of claim 6, wherein evaluating the plurality of display control options
comprises:

evaluating lifetime metrics and non-lifetime metrics for each of the plurality of display control options; and

ranking the plurality of display control options based on the evaluation.

- 5 11. The method of claim 10, wherein evaluating lifetime metrics and non-lifetime metrics for each of the plurality of display control options comprises:

using at least one of a lifetime model and a usage model to evaluate lifetime metrics and non-lifetime metrics for each of the plurality of display control options.

- 10 12. The method of claim 1, wherein determining a lifetime metric for at least a portion of the display comprises:

determining at least one of past use and predicted future use of the at least a portion of the display.

- 15 13. The method of claim 1, wherein determining a lifetime metric for at least a portion of the display comprises:

using a lifetime model to determine the lifetime metric, wherein the lifetime model includes an estimation of the lifetime of the at least a portion of the display.

- 20 14. The method of claim 13, wherein the lifetime model comprises a display degradation curve or another similar estimation of remaining lifetime of the display based on past use of the display.

15. The method of claim 13, wherein using a lifetime model to determine the lifetime metric comprises:

measuring use of the at least a portion of the display; and

applying the measured use to the lifetime model to determine the lifetime metric.

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16. The method of claim 13, wherein using a lifetime model to determine the lifetime metric comprises:

estimating the lifetime costs of applications typically executed on a computer system including the display;

10 determining properties of screen usage for the display, the display displaying information from the applications;

estimating the use of the at least a portion of the display based on the estimated lifetime costs and determined properties; and

applying the estimated use to the lifetime model to determine the lifetime metric.

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17. The method of claim 1, wherein identifying a plurality of display control options comprises:

analyzing usage of at least one of the display and one or more displays similar to the display;

20 determining usage patterns from analyzing the usage; and

analyzing the usage patterns to determine the plurality of display control options.

18. The method of claim 1, wherein the at least a portion of the display comprises at least one of a sub-pixel, a pixel, and a group of pixels in the display.
19. The method of claim 1, wherein the plurality of display control options comprise
5 parameters for displaying information on the at least a portion of the display.
20. A method comprising:
determining a lifetime metric for at least a portion of a display using a lifetime
model;
10 determining whether to control the at least a portion of the display based on the
lifetime metric; and
identifying at least one display control option using a usage model in response to
determining to control the at least a portion of the display.
- 15 21. The method of claim 20, further comprising:
implementing the at least one display control option to increase the remaining life
of the at least a portion of the display.
22. The method of claim 20, wherein the lifetime model includes an estimation of the
20 lifetime of the at least a portion of the display.

23. The method of claim 20, further comprising:
profiling use of at least one of the display and one or more displays similar to the
display to establish the usage model.
- 5 24. The method of claim 23, wherein profiling comprises:
profiling use by a current user of the display.
25. The method of claim 23, wherein profiling comprises:
analyzing past use of at least one of the display and the one or more similar
10 displays by a plurality of users.
26. An apparatus comprising:
means for displaying information;
means for determining a lifetime metric associated with at least a portion of the
15 means for displaying;
means for determining whether to control the at least a portion of the means for
displaying based on the lifetime metric; and
means for identifying a plurality of display control options operable to increase a
remaining life of at least a portion of the display in response to determining to control the
20 at least a portion of the means for displaying.
27. The apparatus of claim 26, further comprising:
lifetime model means for estimating a life of the means for displaying.

28. The apparatus of claim 26, further comprising:

usage model means for estimating usage of the means for displaying.

29. The apparatus of claim 27, further comprising:

5 means for evaluating the plurality of display control options using at least one of the lifetime model means and the usage model means; and

means for selecting at least one of the plurality of display control options based on the evaluation.

10 30. The apparatus of claim 29, further comprising:

means for implementing a selected one of the plurality of display control options.

31. Computer software embedded on a computer readable medium, the computer software comprising instructions of:

15 determining whether to control at least a portion of a display based on a lifetime metric;

identifying a plurality of display control options in response to determining to control the at least a portion of the display; and

selecting at least one of the display control options to control the display.

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32. The computer software of claim 31, further comprising instructions of:

implementing the selected display control option to increase a remaining life of the at least a portion of the display.

33. The computer software of claim 31, wherein the instructions of identifying a plurality of display control options comprises instructions of:

identifying a plurality of display control options using a usage model.

5 34. The computer software of claim 33, wherein the instructions of selecting at least one of the display control options comprises instructions of:

selecting at least one of the display control options using at least one of the usage model and a lifetime model.

10 35. A computer system comprising:

a display operable to display a visual representation of information on the display;

a processor operable to determine a plurality of control options for increasing the remaining life of the display, each control option including parameters varying the visual representation of information on the display; and

15 a display controller operable to receive parameters for one of the control options identified by the processor to control the visual representation of information on the display.